

Serial No. 09/665,122
Amendment dated July 21, 2004

Atty. Docket No. 249/216
Reply to Office action of Apr. 22, 2004

REMARKS

Prior to entry of this amendment, claims 1-7 are currently pending in the subject application. By the instant amendment, claims 1 and 5 are amended to more particularly recite the subject matter of the present invention. The instant amendment adds no new matter as support for the amendments may be found in the original specification and figures, e.g., FIGS. 1 and 4. Claims 3 and 7 are amended to delete an expression deemed indefinite by the Examiner. Claims 1 and 5 are independent.

Applicant respectfully requests that the Examiner acknowledge acceptability of the original drawings filed on September 20, 2000, in the next Official action.

Applicant notes that an Information Disclosure Statement ("IDS") was filed in connection with the subject application on June 1, 2004. Applicant respectfully requests that the Examiner acknowledge consideration of the IDS in the next Official action.

Claims 1-7 are presented to the Examiner for further prosecution on the merits.

A. Introduction

In the outstanding Office action, the Examiner rejected claims 3 and 7 under 35 U.S.C. § 112, second paragraph, rejected claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,747,926 to Nakamoto et al. ("the Nakamoto et al. reference"), and rejected claims 5-7 under 35 U.S.C. § 103(a) as being obvious in view of the Nakamoto et al. reference in view of U.S. Patent No. 5,432,015 to Wu et al. ("the Wu et al. reference").

B. Asserted Indefiniteness Rejection of Claims 3 and 7

In the outstanding Office action, the Examiner rejected claims 3 and 7 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly

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claim the subject matter which applicant regards as the invention. Specifically, the Examiner cited the terms "easily" in claim 3 and "readily" in claim 7, as being relative terms which render the claims indefinite.

By the instant amendment, the expression "easily" has been deleted from claim 3 and the expression "readily" has been deleted from claim 7. Applicant respectfully submits that claims 3 and 7 are now definite.

Accordingly, reconsideration and withdrawal of the rejections of claims 3 and 7 are respectfully requested.

C. Asserted Anticipation Rejection of Claims 1-4

In the outstanding Office action, the Examiner rejected claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,747,926 to Nakamoto et al. ("the Nakamoto et al. reference").

To support this rejection, the Examiner asserted:

Regarding claim 1, Nakamoto discloses in figure 5H, a lower electrode (106), a ferroelectric layer (102), having a top surface with two end portions, overlies the lower electrode, an insertion electrode (302) formed on a region excluding the two end portions of the top surface of the ferroelectric layer, a dielectric layer (303) having a predetermined pattern (center aperture) is formed along the top surface of the ferroelectric layer and the insertion layer, and a dummy upper electrode (304) formed on a side of the dielectric layer opposite the ferroelectric layer.

Office action of Apr. 22, 2004, at pp. 2-3.

The subject invention, as presently claimed, is patentably distinct from the disclosure of the cited prior art reference for at least the following reasons. Specifically, the Nakamoto et al. reference fails to disclose or even suggest "an insertion electrode formed on a region excluding

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the two end portions of the top surface of the ferroelectric layer,” as recited in claim 1. Further, the Nakamoto et al. reference fails to disclose or even suggest “a dielectric layer having a predetermined pattern is formed along the top surface of the ferroelectric layer and the insertion electrode to encapsulate the insertion electrode,” as presently recited in claim 1.

In the outstanding Office action, the Examiner compares the electrode layer 302 of the Nakamoto et al. reference with the insertion electrode 12 of claim 1. Claim 1 recites that the insertion electrode is “formed on a region excluding the two end portions of the top surface of the ferroelectric layer.” On the contrary, in the Nakamoto et al. reference, the electrode layer 302 is formed on a top surface of the ferroelectric layer 102 including end portions of the ferroelectric layer 102 and excluding a central portion of the ferroelectric layer 102, where the emitter 101 is formed. Accordingly, the Nakamoto et al. reference fails to disclose or even suggest the insertion electrode 12, as recited in claim 1.

By way of further distinction, the Examiner compares the second insulating layer 303 of FIG. 5H with the dielectric layer of claim 1. The second insulating layer 303 of the Nakamoto et al. reference is patentably distinct from the dielectric layer of claim 1 in at least two respects. First, the second insulating layer 303 of the Nakamoto et al. reference fails to encapsulate the electrode layer 302, as recited in claim 1. In particular, it may be seen in the figures of the Nakamoto et al. reference, e.g., in FIGS. 4 and 5H, that end portions of the electrode layer 302 are exposed in the vicinity of the emitter 101. Second, the second insulating layer 303 of the Nakamoto et al. reference is not formed along the top surface of the ferroelectric layer 102 and the electrode layer 302, it is only formed along the top of the electrode layer 302 and is not formed on the ferroelectric layer 102. On the contrary, as recited in claim 1 of the present

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invention, the dielectric layer 13 of FIG. 1 of the present invention, is formed along the top of the ferroelectric layer 11 and the insertion electrode 12 and encapsulates the insertion electrode 12. Accordingly, the Nakamoto et al. reference fails to disclose or even suggest the dielectric layer 13, as now recited in claim 1.

In view of the above distinctions between the subject invention as presently claimed and the cited prior art reference, claim 1 is believed to be in condition for allowance, and a notice to such effect is respectfully requested.

In addition, claims 2-4 depend directly from claim 1, and as such claims 2-4 are believed to be similarly allowable as depending from an allowable base claim.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-4 are respectfully requested.

D. Asserted Obviousness Rejection of Claims 5-7

In the outstanding Office action, the Examiner rejected claims 5-7 under 35 U.S.C. § 103(a) as being obvious in view of the Nakamoto et al. reference in view of U.S. Patent No. 5,432,015 to Wu et al. ("the Wu et al. reference").

To support this obviousness rejection, the Examiner applies the Nakamoto et al. reference as above and additionally cites the Wu et al. reference for teaching a second dielectric layer being formed along the top surface of the first dielectric layer excluding the projected edges.

The distinctions presented above between the Nakamoto et al. reference and claim 1 of the present invention are equally applicable to claim 5. Specifically, the Nakamoto et al. reference fails to disclose or suggest "an insertion electrode formed on a region excluding the two end portions of the top surface of the ferroelectric layer" and "a first dielectric layer having

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side edges and a top surface is formed along the top surface of the ferroelectric layer and the insertion electrode to encapsulate the insertion electrode, the side edges being projected," as now recited in claim 5.

The Wu et al. reference fails to supply these teachings, which are lacking from the Nakamoto et al. reference.

In view of the above distinctions between the subject invention as presently claimed and the combination of cited prior art references, claim 5 is believed to be in condition for allowance, and a notice to such effect is respectfully requested.

In addition, claims 6 and 7 depend directly from claim 5, and as such claims 6 and 7 are believed to be similarly allowable as depending from an allowable base claim.

Accordingly, reconsideration and withdrawal of the rejections of claims 5-7 are respectfully requested.

E. Conclusion

Since the cited prior art references, taken alone or in combination, fail to anticipate or render obvious the subject invention as presently claimed, applicant respectfully submits that claims 1-7 are now in condition for allowance and notice to that effect is respectfully requested.

The remaining documents cited by the Examiner were not relied on to reject the claims. Therefore, no comments concerning these documents are considered necessary at this time.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

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In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & STERBA, P.C.

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Richard A. Sterba REG. NO.
43,162
for: Eugene M. Lee, Reg. No. 32,039

LEE & STERBA, P.C.
1101 WILSON BOULEVARD, SUITE 2000
ARLINGTON, VA 22209
703.525.0978 TEL
703.525.4265 FAX

PETITION and
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This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying papers may also be charged to Deposit Account No. 50-1645.

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